

BOGOLEPOV, N.K.; MURAV'YEVA, V.G.

Compensatory reactions following injuries of nerves of the upper  
extremity. Zhur.nev. i psikh. 59 no.6:729-735 '59. (MIRA 13:1)

1. TSentral'nyy nauchno-issledovatel'skiy institut ekspertizy trudo-  
spesobnosti i organizatsii truda invalidov i kafedra vrachebno-trudo-  
voy ekspertizy TSentral'nogo instituta usovershenstvovaniya vrachey,  
Moskva.

(ARM, innervation,  
nerve inj., compensatory reactions (Bus))

MURAV'YEVA V I

CA

17

*Scopolia carniolica* as the best source of hyoscyamine.  
V. I. Murav'eva and A. I. Ban'kovskii (Vsesoyuz.  
Nauch.-Issledovatel. Inst. Lekarn. Rastenii). Med.  
Prom. S.S.S.R. 1969, No. 4, 26-30. — *S. carniolica* exceeds  
all known plant sources in its hyoscyamine content;  
av. harvest of 1 hectare of the plants yields 3.5 tons of  
roots with 1.3-1.5% hyoscyamine content, i.e. about 40  
kg. The most logical harvesting time in the moderate  
and northern climatic regions is fall, when some 90% of  
the total alkaloid matter can be obtained in cryst. state  
and when the hyoscyamine level is max. (1.5-1.7%).  
(I. M. Kozlovskii)

1ST AND 2ND DEGREE PROCESSES AND PROPERTIES INDEX

12

CA

Vitamin C content of some rose varieties. A. I. Man'-kovskii, V. I. Murav'eva, and N. N. Voroshilov. *Farmat-siya* 8, No. 4, 26-9 (1945).—The wt.-% of ascorbic acid (I) varied widely in dried pulp from ripe hips of 14 rose varieties; *Rosa canina* L. was lowest (1.40, 1 detn.) and *R. cinnamomea* L. highest (9.72, av. of 11 detns., range 4.81-14.41). Second was *R. suberhjelmi* Schrenk (9.38, 7 detns., range 1.54-14.31); third, *R. bigerrima* S. (9.13, 12 detns., range 5.27-17.62). A given plant is fairly consistent in yield of I from year to year. Other roses, recommended as sources of I, are *R. dahurica* (5.03, 41 detns., range 1.21-14.61) and *R. laxa* (8.79, 10 detns., range 2.23-13.82). Ripe rose hips are richest in I. Julian P. Smith

436-564 METALLURGICAL LITERATURE CLASSIFICATION

FROM SCHWABE

EXIST ONE ONE 151

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

MURAV'YEVA V.I.

BEREZHINSKAYA, V.V.; ZEMLINSKIY, S.Ye.; KUSHEE, E.E.; MURAV'YEVA, V.I.  
SATSIPEROV, F.A. [deceased]; ITSKOV, N.Ya., kandidat sel'skokho-  
zyayst. nauk, redaktor; TUROVA, A.D., doktor meditsinskikh nauk,  
redaktor; ZHUKOV, G.I., redaktor; BEL'CHIKOVA, Yu.S., tekhnii-  
cheskiy redaktor.

[Belladonna] Belladonna. Pod.red. N.IA. Itakova i A.D. Turovoi.  
Moskva, Medgis, 1953. 115 p. (MLRA 7:8)  
(Belladonna)

MURAV'YEVA, V. I.

Chemical study of alkaloids of *Securinega suffruticosa*.  
 V. I. Murav'eva and A. I. Buz'kovskii. Doklady Akad.  
 Nauk S.S.S.R. 110, 853-1000 (1956); cf. C.A. 50, 17335c;  
 Flora S.S.S.R. 14, (1949). --Extn. of alkaloids from the  
 leaves with (CH<sub>2</sub>Cl)<sub>2</sub>-10% NH<sub>4</sub>OH and the usual treatment  
 of the crude products after further extn. with CHCl<sub>3</sub> gave  
 0.38% total alkaloids. Extn. with Et<sub>2</sub>O gave 0.15% cryst.  
 products, which treated with hot EtOH gave on cooling  
 yellow crystals of *securinine*, C<sub>17</sub>H<sub>19</sub>O<sub>2</sub>N, m. 139-40°, [α]<sub>D</sub><sup>20</sup>  
 1042.3° (EtOH); 1105.8° (CHCl<sub>3</sub>); HCl salt, m. 230°, [α]<sub>D</sub><sup>20</sup>  
 -259.2° (EtOH); *nileate*, m. 205°, [α]<sub>D</sub><sup>20</sup> -312.12° (EtOH);  
*sulfate*, m. 128°; *picrate*, m. 218°; *picrolonate*, m. 194°;  
*chloraurate*, m. 168°; *chloroblatinate*, m. 210°; and *per-*  
*chlorate*, m. 202°. The substance gave a neg. test for N-Me  
 groups or an oxo group. Hydrolysis with 10% KOH in  
 MeOH and neutralization gave a yellow substance, m. 139-  
 40°, identified as *securinine*, indicating that the O content of  
 the alkaloid resides in a lactone group, also confirmed by  
 an absorption max. at about 250 mμ. The alkaloid contains  
 an aromatic or heterocyclic ring system and lacks NH or  
 PO groups.  
 G. M. Kozlovskii

RMM MT

all Union Sci Res. Inst. Medic and Aromatic Plants.

MURAV'YEVA V. I.

*Med* Securinine—a new alkaloid of strychnine-like action. V. I. Murav'eva and A. I. Ban'kovskii. *Med. Prom.* 19, No. 2, 27-8 (1956).—A new alkaloid has been obtained from the leaves of *Securinega tufruticosa* which is found in the Ussuri region. Two kg. of crushed and air-dried leaves were wetted with 200 cc. of 10%  $\text{NH}_3$  and exhaustively extd. with dichloroethane. The ext. was treated repeatedly with 10% of  $\text{H}_2\text{SO}_4$  which removed the alkaloids. The acid soln. was made alk. with 28%  $\text{NH}_3$  and the alkaloids were extd. with  $\text{CHCl}_3$ . The ext. was dried over anhyd.  $\text{Na}_2\text{SO}_4$  and the solvent evapd. to yield 7.9 g. or 0.38% of raw material. It represents the sum of various alkaloids present in the leaves. Twenty g. of the total alkaloids was treated 3 times with boiling  $\text{Et}_2\text{O}$ , 200 cc. each time. The insol. residue did not respond to the tests for alkaloids. The residue left after evapn. of  $\text{Et}_2\text{O}$  yielded 7.9 g. of cryst. alkaloids, 39.5% of taken amt., or 0.16% of dry leaves. The crystals, when crystd. twice from boiling  $\text{EtOH}$  and dried *in vacuo* at 100%, melted at 139-40°,  $[\alpha]_D^{25}$  1.0423 ( $\text{EtOH}$ ). Found: C, 71.74, H 7.03, and N 6.46%; for the formula  $\text{C}_{21}\text{H}_{29}\text{O}_2\text{N}$ , calcd. C 71.87, H 6.95, and N 6.46%. Mol. wt. detd. cryoscopically in benzene was 203.00, 200.10. A. S. Mirkin

2

MURAV'YEVA, V.I.; BAN'KOVSKIY, A.I.

Chemical study of the alkaloids of *Securinega suffruticosa*. Trudy  
VILAR no. 11:16-21 '59. (MIRA 14:2)  
(EUPHORBIACEAE) (ALKALOIDS)

MURAV'YEVA, V.I.

Method for a quantitative determination of securinine in  
vegetable raw material. Trudy VILAR no. 11:279-281 '59.  
(MIRA 14:2)

(SECURININE)



SHEVELEV, V.A.; BAN'KOVSKIY, A.I.; MURAV'YEVA, V.I.

Machine-drying of opium raw material, Trudy VILAR no. 11:351-353  
'59. (MIRA 14:2)

(BIOLOGICAL PRODUCTS—DRYING) (OPIUM)

MURAV'YEVA, V.I.; KUZOVKOV, A.D.

Study of alkaloids from *Securinega suffruticosa* (Pall.) Rehd.  
Zhur.ob.khim. 33 no.2:693-694 F '63. (MIRA 16:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut lekarstven-  
nykh i aromaticeskikh rasteniy (VILAR).  
(Securinine)

IMAYEV, M.G.; MURAYEVA, V.S.; KHALILOV, R.G.

Obtaining 2,4-di-~~tert~~-amylphenol. Izv. vysh. ucheb. zav.; neft'  
i gaz 6 no.3:71-73 '63. (MIRA 16:7)

1. Bashkirskiy gosudarstvennyy universitet imeni 40-letiya  
Oktyabrya.

(Phenol)

SOV/120-58-6-6/32

AUTHORS: Gnedich, A. V., Kryukova, L. N., Murav'yeva, V. V.,  
Shumshurov, V. I.

TITLE: The Focussing of Electrons in a Spiral Spectrometer  
(Issledovaniye fokusirovki elektronov v spiral'nom spektrometre)

PERIODICAL: Pribory i tekhnika eksperimenta, 1958, Nr 6, pp 41-45  
and 1 plate (USSR)

ABSTRACT: The spiral spectrometer has been used to study the spectra of conversion and secondary electrons (Refs.1 and 2) and also to study  $\mu$ - and  $\pi$ -mesons (Refs.3 and 4). Theoretical calculations on spiral spectrometers have been carried out at the Moscow State University (Refs.5 and 6) and also abroad (Refs.7 to 10). However, at the present time the theory of this type of spectrometer cannot be used to calculate accurately the form and size of the electron beam and the dispersion of this instrument in various regions in the magnetic field. In this connection it is of interest to obtain some experimental data on properties of the spectrometer. A photographic

Card 1/4

SOV/120-58-6-6/32

## The Focussing of Electrons in a Spiral Spectrometer

method is described in the present paper. In a spiral spectrometer an axially symmetric transverse non-uniform magnetic field is used. The electron source is placed at the centre of the field while the recording device is at some distance from it, the distance being governed by the radius of the limiting plane trajectory. In the instrument investigated, the magnetic field was produced by cylindrical pole pieces 300 mm in diameter. The gap between the pole pieces was 82 mm. The fall-off of the field at the edges of the pole pieces was used. Fig.1 shows a graph of the dependence of the magnetic field on distance from centre as well as a plot of  $1/r$ . As can be seen, the field falls off more rapidly than  $1/r$  over an appreciable region, which is a necessary condition for a spiral spectrometer. The successive changes in the meridional section of the electron beam were studied when the beam traverses the magnetic field of the spectrometer. To get this beam profile the set-up illustrated diagrammatically in Fig.1 was used. An X-ray film camera, 4, was placed in the path of the beam and along the radius, as shown in Fig.2. An active deposit of Th served as the source of electrons. It was deposited on a copper

Card 2/4 wire 0.1 mm dia and 14 mm long in a vertical position. Con-

SOV/120-58-6-6/32

# The Focussing of Electrons in a Spiral Spectrometer

centrically with the source an aluminium screen was mounted. This screen was 30 mm dia and had a  $3 \times 14 \text{ mm}^2$  slit. This slit could be rotated without letting air into the chamber. By rotating the slit, the angle  $\phi$  between the direction of exit and the X-ray camera could be varied. The results obtained are shown in Figs. 3 and 6. It is concluded that in a spiral  $\beta$ -spectrometer there are 3 regions for the electron beam which can be used for spectrometric measurements. Fig. 9 shows conversion lines obtained with a counter, using a source 0.6 mm wide with a relative solid angle of  $3.4 \times 10^{-3}$  steradian. The relative half-width of the lines was 0.32% (F-line of ThB) and 0.37% ( $\text{Ce}^{144}$ ,  $E = 92 \text{ KeV}$ ).

Card 3/4

SOV/120-58-6-6/32

The Focussing of Electrons in a Spiral Spectrometer

V. S. Shpinel' is thanked for valuable advice. There are 9 figures, 1 table and 10 references; 4 of the references are Soviet, 5 are English and 1 is Italian.

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki  
MGU (Scientific Research Institute for Nuclear Physics,  
Moscow State University)

SUBMITTED: December 30, 1957.

Card 4/4

SOV/49-22-7-21/26

AUTHORS: Gnedich, A. V., Kryukova, L. N.,  
 Murav'yeva, V. V., Shpinel', V. S., Shumshurov, V. I.

TITLE: On the Problem of Doppler Broadening of Lines of Conversion  
 Electrons Emitted by Recoil Nuclei (K voprosu o dopplerovskom  
 ushirenii liniy konversionnykh elektronov, ispuskayemykh yadrami  
 ot dachi)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1958,  
 Vol. 22, Nr 7, pp. 867 - 870 (USSR)

ABSTRACT: When  $\text{Bi}^{212}$  ( $\text{ThC}$ ) decays by an emission of an  $\alpha$ -particle to  $\text{Tl}^{208}$   
 ( $\text{ThC}''$ ), this  $\text{Tl}$  nucleus exhibits a transition from an excited  
 state with 40 keV to the ground state. The Doppler effect ex-  
 hibited by these conversion lines is investigated. At first  
 a plane source of infinite extension is investigated. The thick-  
 ness of the slab exerts a considerable influence on the conver-  
 sion lines. The shape of the conversion lines was investigated  
 with a helical focusing- $\beta$ -spectrometer. An active thorium  
 deposit served as a source. The theoretical shape of the lines  
 was computed under the assumption, that the mean life  $\tau$  of the  
 level of 40 keV is within the range  $T < \tau < t$ . ( $\tau$  denotes the life  
 of the excited state, and  $T$  the slowing-down period of the

Card 1/3



On the Problem of Doppler Broadening of Lines of  
Conversion Electrons Emitted by Recoil Nuclei

SOV/48-23-7-21/26

nuclei in the target). The Doppler effect leads to a broadening of the lines towards high energies. The experimentally obtained B-line well agrees with the theoretical one. This broadening of lines towards high energies was also found with  $\alpha$  lines ( $L_{II}$  of the same transition,  $E_e = 25$  keV). The authors checked whether this effect could be caused by distortions of line shape due to the apparatus. The observed broadening of the B- and  $A\alpha$  conversion lines is actually caused by the Doppler effect. As a summary it is stated that the investigation of the line shape of conversion electrons (emitted from moving nuclei) permits to estimate the life  $\tau$  of the corresponding levels of the nucleus. The analysis of the line shape must take into consideration the actual experimental condition and in particular the thickness of the source. The life can also be estimated by determining the reduction of intensity of the lines due to the emission of recoil nuclei from the source, if the thickness of the source is known. The analysis of the line shape of the conversion spectrum of moving nuclei is also necessary in the estimation of the relative intensities of the conversion lines. There are 5

Card 2/3

On the Problem of Doppler Broadening of Lines of  
Conversion Electrons Emitted by Recoil Nuclei

SOV/48-22-7-21/26

figures and 9 references, 4 of which are Soviet.

ASSOCIATION: Moskovskiy gos. universitet im. M.V. Lomonosova (Moscow State  
University imeni M.V. Lomonosov)

Card 3/3

21(8)

AUTHORS:

Gnedich, A. V., Kryukova, L. N.,  
Murav'yeva, V. V.

SCV/56-36-1-53/62

TITLE:

On the 100 keV Transition in the Spectrum of  $Ce^{144}$  (0 pere-  
khode 100 keV v spektre  $Ce^{144}$ )

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,  
Vol 36, Nr 1, p 329 (USSR)

ABSTRACT:

The scheme of the  $Ce^{144} - Pr^{144}$  decay has hitherto not been determined. The conversion transitions between some levels of the nucleus  $Pr^{144}$  on various shells give very similar electron lines. This property of the conversion spectrum of  $Ce^{144}$  complicates its interpretation and raises doubts as to the existence of some transitions. The authors investigated the conversion spectrum of  $Ce^{144}$  by means of a spectral  $\beta$ -spectrometer having a resolving power of 0.25 %. A diagram shows the conversion line of the energy 57.7 keV. The half-width of this line is greater (0.63 %) than the other lines of this spectrum. This fact and the shape of the line prove its complexity. A graphic analysis of this line gave 2

Card 1/2

On the 100 kev Transition in the Spectrum of  $Ce^{144}$  SOV/56-36-1-53/62

components which correspond to the energies 57.76 and 57.45 kev. This energy values agree well with those of K-100 and M-59, and they confirm the existence of both transitions. The authors separated out also the line  $L_1-100$ ,  $E_e = 92.83$  kev. According to the results of the present investigation the energy of the 100 kev transition has the exact value  $(99.7 \pm 0.1)$  kev. There are 1 figure and 6 references, 3 of which are Soviet.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Institute of Nuclear Physics of Moscow State University)

SUBMITTED: September 22, 1958

Card 2/2

2

0357A

2/04/60/024/009/007/015  
0013/005

24.6720  
MELTZBERG, S. V., ROTH, B. A., LARSEN, A. E.,  
FRUERS, L. A., MATHIAS, V. V.

TITEL: Investigation of Neutron-Deficient Platinum Isotopes / 19

PERIODICAL: Investigation of Neutron-Deficient Platinum Isotopes, 1960.  
Vol. 24, No. 9, pp. 1105-1112

ABSTRACT: The authors studied neutron-deficient platinum isotopes which were formed by disintegration of gold induced by 600-Mev pions. The platinum isotopes were studied by spectrum analysis of conversion electrons and on the basis of "genetic" relations. The platinum and iridium fractions of high specific activity were separated from a 2 g of gold bombarded on the cyclotron of the GIFAT (Goldschmidt Institute of Nuclear Research). A series of experiments was conducted to determine the half-life of the carrier-free separation of platinum and iridium isotopes. This method is based on the separation of their chlorides complex compounds by means of anion exchange (Fig. 1). The results of the spectrum analysis of conversion electrons of the iridium fraction are given in Ref. 6. The spectrum of

Card 1/2

the Pt conversion electrons was measured by means of a magnetic spiral spectrometer having a resolution of 0.1%. The experimental spectrum is shown in Fig. 2. The results of measurement of the conversion lines are given in a table. The half-life of the Pt isotopes was determined by separating the daughter iridium from the Pt fraction at regular intervals during one to four hours (Fig. 3). The half-life of Pt106 and Pt107 was calculated from the activity of Ir (2 - 15 hours) and Ir' (87 - 100 hours) to be 2.5 ± 0.5 hours. This is in agreement with the data of Ref. 6. The half-life of Pt was calculated from the activity of the daughter iridium having a half-life of three hours to be 2.6 ± 0.6 hours. In accordance with Ref. 6, this is the half-life of the new isotope Pt106. There are 3 figures, 1 table, and 10 references: 2 Soviet, 2 Canadian, and 1 German.

ASSOCIATION: Institut Geobitelli i analiticheskoy khimii Ia. V. I. Veresh-  
nogo Ia. V. I. nash SSSR (Institute of Analytical and  
Analytical Chemistry Inst. V. I. Vereshnogo of the Academy  
of Sciences USSR) Moscow-Isledevolet'skiy Institut Khimii  
Izotopov (Institute of Isotopes) Moscow  
Iziti Moskovo gos. universiteta Ia. V. I. Vereshnogo  
(Scientific Research Institute of Nuclear Physics of Moscow  
State University Inst. V. I. Vereshnogo)

Card 2/2

MLA 4 V. YEV, V. V.

5/048/60/024/012/003/011  
3019/8056

**AUTHORS:** Sorokin, A. A., Bedezh, A., Elizavitskaya, M. F.,  
Krykova, L. B., Milzhenko, A. B., Ginzburg, V. V.,  
Bykov, V. M., Gendrik, E. and Chelintseva, S.

**TITLE:** Study of the Decay of  $^{118}\text{Te}$  and  $^{119}\text{Te}$  and the Level Scheme  
of  $^{119}\text{Sb}$

**PERIODICAL:** Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1960,  
Vol. 24, No. 12, pp. 1484-1491.

**TEXT:** The present paper was read at the 10th All-Union Conference on  
Nuclear Spectroscopy, which was held in Moscow from January 15 to 19,  
January 27, 1960. Neutron-deficient tellurium isotopes were obtained  
by a one and a half hour irradiation with 660-Mev protons from the  
( $\alpha$ ,n) reaction of  $^{118}\text{Te}$  (see [1]). The tellurium was chemically  
separated from the irradiated material. The measurements of the  $\beta$ -spectrum  
and the  $\beta$ - $\gamma$  coincidences were carried out by means of a scintillation  
spectrometer. The  $\beta$ - $\gamma$  coincidences were measured by means of a  $\beta$ -spectro-

Card 1/A

meter, which was connected with a coincidence circuit with a  $\beta$ -spectrometer.  
The  $\beta$ -spectrum of  $^{118}\text{Te}$  consists essentially of a component with its upper  
edge at 2700  $\pm$  50 keV. As shown by an exact investigation, this  $\beta$ -spectrum  
is furnished by the isotope  $^{118}\text{Te}$ , which is in equilibrium with  $^{118}\text{Sb}$ . On  
the basis of these results, the authors assume that the  $^{118}\text{Te}$  and  $^{118}\text{Sb}$   
decay mainly into the ground state of the daughter nuclei. For the ground  
state of  $^{118}\text{Sb}$ , 0 $^{+}$ , and for the initial state of  $^{118}\text{Te}$ , 0 $^{+}$  or 1 $^{+}$  is given  
6.1  $\pm$  0.1 days are given as the half-life of  $^{118}\text{Te}$ . From investigations  
carried out with the scintillation  $\beta$ -spectrometer, in which  $^{118}\text{Sb}$ ,  $^{117}\text{Sb}$ ,  
and  $^{123}\text{Sb}$  were detected, the authors are able to state that all  $\beta$ -transi-  
tions having a half-life of 4.75 days are related to the decay of  $^{119}\text{Te}$ .  
They are transitions between the  $^{119}\text{Sb}$  levels. From a thorough study of  
these lines and the angular correlation of the  $\beta$ -radiation, the authors  
were able to set up the decay scheme of  $^{119}\text{Te}$  shown in Fig. 4. Finally,

Card 2/A

the authors deal with the  $^{119}\text{Te}$  isomer. They arrive at the conclusion  
that the isomer of  $^{119}\text{Te}$  with a half-life of 4.75 days is associated  
isomeric state with the spin 1/2 $^{+}$  and that the state of  $^{119}\text{Te}$  with a  
half-life of 12 hours is the ground state. The authors thank V. V. Vashukov  
for producing the isotopes of tellurium and L. Vasilina, A. A. Konstantinov and A. A.  
Ginzburg for their assistance in carrying out measurements and  
concluding the experimental results. There are 10 figures and 14 references.  
10 Soviet, 3 US, and 1 Dutch.

5/048/60/024/012/003/011  
3019/8056

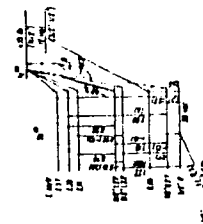


Fig. 4. Decay scheme of  $^{119}\text{Te}$  isomer. The numbers in parentheses are the spin and parity of the states.

GNEBICH, A.V.; KRYUKOVA, L.N.; MURAV'YEVA, V.V.

Relative intensities of ~~gamma~~ transitions in strongly de-  
formed nuclei. Zhur.eksp.i teor.fiz. 38 no.3:726-728  
Mr '60. (MIRA 13:7)

1. Institut yadernoy fiziki Moskovskogo gosudarstvennogo  
universiteta.  
(~~Gamma~~ rays) (Nuclear reactions)

KRYUKOVA, L.N.; MURAV YEVA, V.V.; DUDA, L.; MALYSHEVA, T.V.; KHOTIN, E.A.

Spectra of conversion electrons in neutron-deficient platinum  
isotopes. Izv.AN SSSR.Ser.fiz. 25 no.10:1257-1265 '61.

(MIRA 14:10)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo  
gosudarstvennogo universiteta im. M.V.Lomonosova i Institut geokhimii  
i analiticheskoy khimii im. V.I.Vernadskogo Akademii nauk SSSR.  
(Platinum--Isotopes) (Electrons--Spectra)



S/048/62/026/012/008/016  
B117/B186

AUTHORS: Kryukova, L. N., Murav'yeva, V. V., Shpinel', V. S.,  
Malysheva, T. V., and Khotin, V. A.

TITLE: Scheme of levels of Ir<sup>189</sup> excited on electron capture in Pt<sup>189</sup>

PERIODICAL: Akademiya nauk SSSR.. Izvestiya. Seriya fizicheskaya, v. 26,  
no. 12, 1962, 1492 - 1494

TEXT: The decay of the neutron-deficient isotope Pt<sup>189</sup>,  $T_{1/2} = 10.5$  hrs, was studied by analyzing the conversion spectrum of the platinum fraction. In the 30 - 650 kev range, the measurements were made with a magnetic spiral spectrometer using a method and experimental conditions described earlier (Izv. AN SSSR. Ser. fiz., 24, 1109 (1960); 25, 1257 (1961)). Besides the lines found previously, two new ones were discovered: 381 kev,  $T_{1/2} =$  several hours, K457.1 and 644.5 kev,  $T_{1/2} = 10 \pm 1$  hr, K720.6. The energies of the  $\gamma$ -transitions in Ir<sup>189</sup> were measured and their multipole orders estimated (Tab. 2). Proceeding from the similarity of the odd isotopes Ir<sup>191</sup> and Ir<sup>193</sup>, a level scheme was proposed on the basis of the

Card 1/4

Scheme of levels of...

S/048/62/026/012/008/016  
B117/B186

sums and differences of the  $\gamma$ -transition energies (Fig. 1). It was supposed that the excited states with energies of 113 and 305 keV correspond to the first and second levels of the principal rotational band. The 94 keV level is a single-particle level  $1/2^- [400]$  and that of 175 keV is the first rotational level of this state. As no direct transition with an energy of 234 keV could be detected, doubt arose whether a level possessing this energy was present, which could be regarded as the second rotational level of the  $1/2^+ [400]$  state. Levels with energies of 568 and 720 keV were not interpreted. If the energies of the lower levels of the odd Ir isotope are represented graphically as a function of the mass number A or the number of neutrons N, a smooth curve results. It was therefore concluded that the equilibrium form of the nucleus does not undergo any considerable change in the transition from N = 122 and N = 116. This paper was presented at the 12th Annual Conference on Nuclear Spectroscopy held in Leningrad from January 26 to February 2, 1962. There are 2 figures and 2 tables. ✓

Card 2/4

Scheme of levels of...

S/048/62/026/012/008/016  
B117/B186

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gos. universiteta im. M. V. Lomonosova (Scientific Research Institute of Nuclear Physics of the Moscow State University imeni M. V. Lomonosov); Institut geokhimii i analiticheskoy khimii im. Vernadskogo Akademii nauk SSSR (Institute of Geochemistry and Analytical Chemistry imeni Vernadskiy of the Academy of Sciences USSR)

Fig. 1. Energy level diagram of Ir<sup>189</sup>.  
Table 2. Energy and multipole order of the  $\gamma$ -transitions in Ir<sup>189</sup>.  
Legend: (1) Possible values of the multipole orders; (2) small admixtures.

Card 3/4

S/048/62/026/012/014/016  
B117/B102

AUTHORS: Kryukova, L. N., Murav'yeva, V. V., Forafontov, N. V., and  
Shpinel', V. S.

TITLE:  $e^- \gamma$ -coincidences in the  $Pt^{188}$  decay

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26,  
no. 12, 1962, 1521 - 1522

TEXT: A double-ray  $\beta$ -spectrometer together with a luminescence  $\gamma$ -spectro-  
meter was used to study the spectra of  $\gamma$ -rays coinciding with conversion  
electrons (L55, K140, K187 and K195). The results confirmed the decay  
scheme of the 10-d  $Pt^{188}$  proposed earlier (Nuclear Data Sheets, no. 3  
(1959)).  $\gamma$ -rays of 140, 380 and 410 keV as well as K-series of X-rays  
coincide with L55. The intensities of these K-series confirm that no  
K-captures take place up to the 55, 457 and 473 keV levels of  $Ir^{188}$ .  
K195 electrons play the main part in the coincidence between the neigh-  
boring lines K187, K195 and the 280 keV- $\gamma$ -rays. The non-coincidence 187  
and 195 keV-quanta coincide with the X-ray K-series. The coincidence  
between K140 electrons and 280-keV  $\gamma$ -quanta verifies the existence of a  
Card 1/2

$e^+ \gamma$ -coincidences in ...

S/048/62/026/012/014/016  
B117/B102

cascade between 140 and 280 kev. The analysis of coincidence and non-coincidence  $\gamma$ -spectra of  $Pt^{188}$  served to determine relative intensities of the  $\gamma$ -lines. Comparison between the  $\gamma$ -intensities and the intensities of the conversion lines resulted in the following ratio of K-shell conversion coefficients:  $\alpha_{K140} : \alpha_{K187} : \alpha_{K195} : \alpha_{K280} : \alpha_{L380} : \alpha_{K410} : \alpha_{K470} = 0.5:1:1:(\leq 0.1):(\leq 0.05):(\leq 0.05):(\leq 0.05)$ . This paper was presented at the 12th Annual Conference on Nuclear Spectroscopy in Leningrad from January 26 to February 2, 1962. There are 2 figures and 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gos. universiteta im. M. V. Lomonosova (Scientific Research Institute of Nuclear Physics of the Moscow State University imeni M. V. Lomonosov)

Card 2/2

ROMANOV, Ya.; DANAGULYAN, A. S.; MURAV'YEVA, V. V.; INKITYUK, L. N., SOROKIN, A. A.  
SHTAL, M. Z.

"Investigations of the Decay of  $Nd^{139m}$  ( $t_{1/2} = 5.5$  hr.)."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22  
Feb 64.

OIYaI (Joint Inst Nuclear Res)

1 ACCESSION NR: AP4010300

S/0048/64/028/001/0098/0101

AUTHOR: Kryukova, L.N.; Murav'yeva, V.V.; Forafontov, N.V.; Malyshova, T.V.; Khotin, B.A

TITLE: Investigation of the decay schemes for platinum 189 and iridium 189 by the method of electron-gamma coincidences [Report, Thirteenth Annual Conference on Nuclear Spectroscopy held in Kiev 25 Jan to 2 Feb 1963]

SOURCE: AN SSSR. Izvestiya, Seriya fizicheskaya, v.28, no.1, 1964, 98-101

TOPIC TAGS: decay scheme, level diagram, platinum 189, iridium 189, conversion electron spectrum, electron gamma coincidence, conversion electron, platinum decay, iridium decay, platinum, iridium

ABSTRACT: The purpose of the investigation was to check, correct and amplify the decay schemes for platinum 189 and its daughter iridium 189. The Pt<sup>189</sup> was obtained by separation from the products of spallation of a gold target by 660-MeV protons. The study was carried out mainly by the method of recording e-γ coincidences. The conversion electron spectrum and some of the coincidence spectra are reproduced. While the results largely substantiate the scheme for Pt<sup>189</sup> proposed by B.Harmatz, T.H.Handley and J.W.Mihelich (Phys.Rev., 128, 1186, 1962), a number of possible differences and discrepancies are noted. [The experimental work was per-

Card 1/2

ACCESSION NR: AP4010300

formed prior to the publication of the paper by Harmatz et al.]. A level diagram for Ir-189 is given. Orig-art. has: 2 tables and 5 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Scientific Research Institute of Nuclear Physics, Moscow State University); Institut geokhimii i analiticheskoy khimii Akademii nauk SSSR (Institute of Geochemistry and Analytic Chemistry, Academy of Sciences SSSR)

SUBMITTED: 00

DATE ACQ: 10Feb64

ENCL: 00

SUB CODE: NS

NO REF SOV: 005

OTHER: 002

Card 2/2



L 16095-65 EWT(m) DIAAP/ESD(t)/ESD(gs)/SSD/AFWL  
ACCESSION NR: AP5000308 8/0056/64/047/005/1644/1652

AUTHORS: Gromov, K. Ya.; Danagulyan, A. S.; Nikityuk, L. N.;  
Murav'yeva, V. V.; Sorokin, A. A.; Shtal', M. Z.; Shpinel', V. S. B

TITLE: Investigation of the decay of neutron-deficient isotopes  
of neodymium. New isotope Nd-138

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47,  
no. 5. 1954. 1644-1652

TOPIC TAGS: neodymium, isotope, level scheme, conversion electron  
spectrum, gamma gamma coincidence, gamma transition

ABSTRACT: This is a continuation of earlier work by a group  
headed by one of the authors (Gromov, Izv. AN SSSR ser. fiz. v. 27,  
1357, 1963) on the decay of Nd<sup>139m</sup>. Neutron deficient neodymium  
isotopes were obtained by bombarding tantalum or erbium-oxide tar-  
gets with 660 MeV protons in the synchrocyclotron of the OIYaI. The

Card 1/5

L 16095-65

ACCESSION NR: AP5000308

3

spectra of the conversion electrons,  $\gamma$  rays, and  $\gamma\gamma$  coincidences were investigated for the 5.5-hr activity of Nd with a double focusing  $\beta$  spectrometer ( $\pi/2$  angle). The results show that most  $\gamma$  transitions observed in this activity belong to  $\text{Pr}^{139}$  excited during the decay of  $\text{Nd}^{139m}$ . A decay scheme for the  $\text{Nd}^{139} \rightarrow \text{Pr}^{139}$  system is deduced from the experimental results and is shown in Fig. 1 of the enclosure. In addition, experimental proof of the existence of the isotope  $\text{Nd}^{138}$ , with a half life of approximately 5 hours, is deduced from the presence in the conversion-electron spectrum of an E0 transition line in the  $\text{Ce}^{138} \rightarrow \text{Pr}^{139} \rightarrow \text{Ce}^{138}$  decay. The decay scheme of the latter chain is shown in Fig. 2 of the enclosure. "The authors thank L. N. Kryukova for help and to the group of chemists of IYAP OIYAI for separating the neodymium fraction." Orig. art. has: 5 figures and 3 tables.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Nuclear Physics Institute, Moscow State University)

Card 2/5

L 16095-65

ACCESSION NR: AP5000308

SUBMITTED: 30Apr64

SUB CODE: NP

NR REF SOV: 006

ENCL: 02

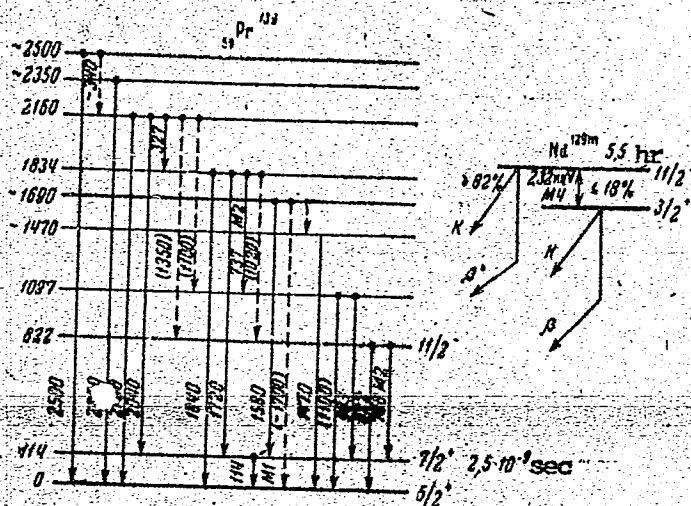
OTHER: 004

Card 3/5

L 16095-65  
ACCESSION NR: AP5000308

ENCLOSURE: 01

Fig.1. Decay scheme of  $\text{Nd}^{139\text{m}}$

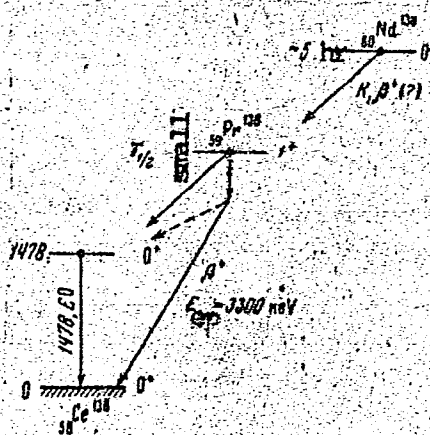


Card 4/5

L 16095-65  
ACCESSION NR: AP5000308

ENCLOSURE: 02  
0

Fig. 2. Decay scheme of the  $Nd^{138} \rightarrow Pr^{138} \rightarrow$   
 $\rightarrow Ce^{138}$  chain



Card 5/5

MURAV'YEVA, Ye.M.

E-5

USSR / Phase Conversions in Solids.

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9317

Author : Usov, V.V., Murav'eva, Ye.M.  
Inst : Scientific Research Institute of the Ministry of Electrical  
Industry USSR

Title : Investigation of the "Internal" Oxidation of Alloys of Silver with Cadmium and Copper.

Orig Pub : Fiz. Metallov i Metallovedeniye, 1956, 2, No 3, 552-561

Abstract : Literature data are used to derive the conditions necessary to obtain oxides of alloying metals in the form of grains, uniformly distributed inside the alloy. The experimental portion of the work contains the determination of the time and temperature dependences of the process of internal oxidation and of its mathematical interpretation and also the influence of the partial pressure of oxygen on the speed of oxidation. A microscopic investigation

Card : 1/2

*Murav'eva Ye.M.*  
USOV, V.V., doktor tekhn. nauk; BEN'KO, P.A., inzh.; MURAV'YEVA, Ye.M., inzh.;  
POVOLOTSKAYA, M.D., inzh.

Silver-nickel contacts for electrical apparatus. Vest. elektroprom,  
27 no.8:5-11 Ag '56. (MIRA 10:9)

1. Nauchno-issledovatel'skiy institut Ministerstva elektrotekhnicheskoy promyshlennosti.

(Electric contactors)

8(2)

PHASE I BOOK EXPLANATION

SON/1955

Sovetskoye po elektricheskoye kontaktam. Moscow, 1956.

Elektricheskiye kontakty, trudy sovetskikh (Electrical Contacts; Transactions of the Conference) Moscow, Gosnaukizdat, 1956. 905 p. 4,150 copies printed.

Editorial board: B.S. Kotakov (Resp. Ed.), V.Y. Usov, B.S. Rumyantsev, I.Ye. Dubrovskiy, and E.S. Krilovskiy; Ed.: I.Ye. Dubrovskiy, Tech. Ed.: E.P. Voronin.

REMARKS: This collection of articles is intended for engineers and technicians designing, developing and operating electrical apparatus and is concerned with electric contact materials. It may also be useful in scientific research in this area and laboratories.

COMMENT: This book comprises reports delivered at the Electric Contacts Conference held in Moscow in November 1956. These papers cover physical processes occurring during connecting or disconnecting, methods of designing and testing electric contacts, production and characteristics of contact materials, and the work of the Institute of Electrical Engineering (VNIIE) and the Institute of Automation and Telemechanics, Academy of Sciences, USSR. Participants approved periodic conferences of physicists, metallurgists, chemists and separate design specialists to discuss problems of electric contacts, which are the components of electric apparatus primarily influencing the reliability of electric systems, especially 6-6 control systems. Their physical, thermal, mechanical and chemical processes have still not been well analyzed. References are given at the end of most of the reports.

## II. DESIGN: APPLICATION AND TESTING METHODS

Popov, G.O. (Zavod "Dinamo," Moscow - Moscow "Dinamo" Plant) Wear Resistance of Contacts in D-c Contactors and Controllers 139

The author describes the method of testing wear resistance of contacts in the "Dinamo" Plant in Moscow and proposes that all other plants adopt this method as a standard one to enable the comparison of test results.

Gordon, A.V. Methods of Testing the Resistance to Wear of Electric Contacts in Aircraft D-c Contactors 140

The author reports the results of work he carried out along with engineers L.F. Izrael, M.A. Pivovarov, V.P. Slonovskiy. He describes the method applied for testing aircraft D-c contacts. This method permits approximating testing conditions with real operating conditions. He suggests applying this method for testing contactors of general industrial use.

Klim, Y.A., and M.A. Gurevich. (Zavod "AT-1," Moscow "AT-1 Plant") Contacts of Vibrator Voltage Regulators 156

The authors summarize the results of investigations they carried out in the Electric Machine Laboratory of the "AT-1" Plant along with engineers Ye.A. Shvedov, V.I. Khramov, Ye.A. Levit, L.S. Mayer, R.V. Gerasimov, O.O. Shubakov on operating conditions of contacts in vibrator voltage regulators of automobile generators, on the design of contact fittings and on various pairs of contact metals.

## III. PRODUCTION AND CHARACTERISTICS OF CONTACT MATERIALS

Al'man, A.B., I.P. Melchenko, and E.S. Bystrykh. (Nauchno-Issledovatel'skiy Institut Elektromekhanicheskoy Promyshlennosti - Scientific-Research Institute for the Electrical Industry) Modern Sintered-Metal Electric Contacts 171

Sintered metals are presently the most suitable materials for arcing tips of high-duty circuit-breakers. The authors explain the technical requirements, describe the structure of the compositions, methods of production, characteristics and applications.

Pravoslavich, I.F., and O.K. Teodorovich. (Institut Metallovedeniya i Spetsial'nym Splavom Akad. Nauk SSSR - Institute for Sintered Metals and Special Alloys, USSR Academy of Sciences) Production Methods of Sintered-Metal Electric Contacts 186

The authors describe the results of their investigation of the comparison of various methods of producing sintered metals.

Dvor, V.F., and Murav'yev, Ye.M. (Nauchno-Issledovatel'skiy Institut Elektromekhanicheskoy Promyshlennosti - Scientific-Research Institute for the Electrical Industry) Thermomechanical Method for Production of Contact Compositions. 190

The authors describe the results of their investigation of the thermomechanical method for producing sintered metal, power switches. The authors explain this thermomechanical method and its advantages.

Al'man, A.B., and E.S. Bystrykh. (Scientific-Research Institute for the Electrical Industry) Internal Structure of Wear-Resistant Electric Contacts 214

The authors discuss their investigation of the influence of internal structure of heterogeneous materials on wear resistance. They paid special attention to the alloys Ag-Cu, Ag-Si-Ag, and Ag-Al.

Card 6/1



SOV/110-59-3-12/25

AUTHORS: Usov, V.V., Doctor of Technical Sciences  
Murav'yeva, Ye.M., Engineer

TITLE: The ~~Results of~~ Tests of Metals and Metallic Protective  
Surfaces Under Laboratory Conditions and at Corrosion  
Testing Stations in the Chinese Peoples Republic  
(Rezultaty ispytaniya metallicheskih materialov i  
pokrytiy v laboratornykh usloviyakh i na korroziionnykh  
stantsiyakh v Kitayskoy Narodnoy Respublike)

PERIODICAL: Vestnik Elektropromyshlennosti, 1959, Nr 3, pp 46-48 (USSR)

ABSTRACT: During the last three years tests have been made of the  
resistance to corrosion of various metals and kinds of  
metal plating under both laboratory and practical  
conditions. The laboratory humidity cabinet conditions  
are described, in some cases the atmosphere included  
sulphur dioxide. The outdoor tests were made on the  
Chinese coast in sub-tropical humid conditions. The  
climatic conditions in South China are compared with  
those of other tropical countries in a table. The method  
of exposing the specimens and the procedure used to assess  
their conditions are described. The test results are

Card 1/2

SOV/110-59-3-12/25

The Results of Tests of Metals and Metallic Protective Surfaces  
Under Laboratory Conditions and at Corrosion Testing Stations in the  
Chinese Peoples Republic

given in Tables 2 and 3, they include the usual metals such as uncoated steel, tin, zinc and cadmium, chromium, copper aluminium and the like. The samples exposed in the laboratory for four months without sulphur dioxide in the atmosphere corroded less than the samples exposed in China, most of the change took place in the first four months. The only materials to resist sulphur dioxide were tin and copper and copper plus tin on steel. It is concluded that satisfactory evidence of tropical performance is obtained from four months' testing under laboratory conditions. There is 1 figure, 3 tables and 2 Soviet references.

SUBMITTED: 1st August 1958.

Card 2/2

L 51306-65 EPF(c)/EWT(m)/ENP(z)/ENP(i)/ENP(b)/EWA(d)/ENP(t) IJP(c) JD/MB  
 ACCESSION NR: AP5007535 S/0292/65/000/003/0037/0039

AUTHOR: Murav'yeva, Ye. M. (Engineer); Povolotskaya, M. D. (Engineer) 2/

TITLE: Silver-zinc oxide and silver-tin oxide compositions obtained by the method of oxidizing annealing 27 17 21

SOURCE: Elektrotehnika, no. 3, 1965, 37-39

TOPIC TAGS: alloy oxidation, silver alloy, zinc containing alloy, tin containing alloy, zinc oxide containing alloy, tin oxide containing alloy, electrical contact alloy.

ABSTRACT: Experiments were performed on samples of silver-zinc and silver-tin alloys in order to obtain compositions of silver with zinc or tin oxide by oxidizing annealing at 800C and to determine the applicability of these compositions to high-power electrical contacts. A composition with oxide in granular form was obtained only from alloys with 3% by weight of either tin or zinc, while on the alloys with 9.7% of tin or zinc a continuous film was formed. Experiments were carried out on samples of cold-rolled alloys, 1.0-2.2 mm thick. Oxidizing annealing was done at 750-800C in oxygen or air. The oxidation of 3% alloys was found to follow the parabolic rate as shown in Fig. 1 of the Enclosure. Alloy density increased very

Card 1/6

L 51306-65

ACCESSION NR: AP5007535

slightly after oxidation but the hardness increased by 100% or more. The variation in resistivity is shown in Fig. 2 of the Enclosure. The contacts were not damaged when subjected to a 2-mm-long arc of about 8 seconds duration. In a corrosion test, samples were exposed to air for 24 hours at room temperature, to distilled water vapor for 20 hours at room temperature and at 100C for 7 hours and then to air at 500C for 5 minutes and at 700C for another 5 minutes. The contact resistance before the test was 0.20 and 0.13 milliohms for silver-zinc and silver-tin alloys, respectively. After the test, the corresponding values were 0.10 and 0.08 milliohms. Contacts made of the alloys were opened and closed 50 times at 60-65 volts and currents of 75, 150, 200, and 300 amperes with no visible damage to the material. The alloys are recommended for further testing in high-power electrical devices. Orig. art. has: 3 figures, 1 formula and 4 tables. [08]

ASSOCIATION: none

SUBMITTED: 00

ENCL: 02

SUB CODE: MM, EE

NO REF SOV: 003

OTHER: 000

ATD PRESS: 4016

Card 2/4

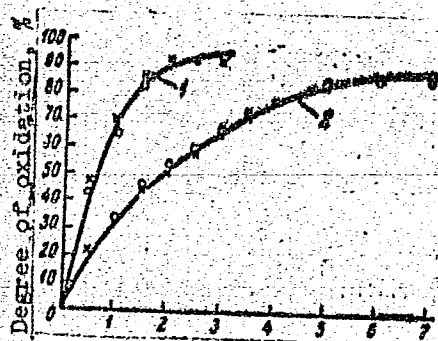
L 51306-65

ACCESSION NR: AP5007535

ENCLOSURE: 01



(a) Oxidation time, hr



(b) Annealing time, hr

Fig. 1. Oxidation curves of the alloys at 800C

a - Silver-zinc (3%); b - silver-tin (3%);  
1 - oxygen; 2 - air.

Card 3/4

L 51306-65

ACCESSION NR: AP5007535

ENCLOSURE: 02

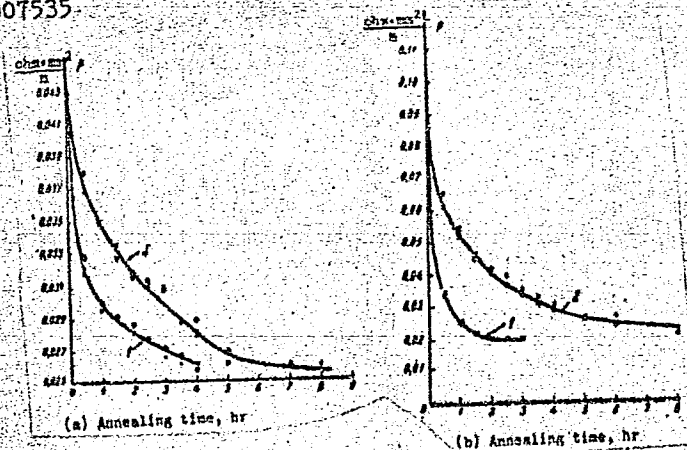


Fig. 2. Variation in alloy resistivity after annealing at 800C

a - Silver-zinc (3%); b - silver-tin (3%);  
1 - oxygen; 2 - air.

Card

4/4

MURAV'YENVA, Ye. P.

Agriculture

Physico-mechanical properties of the seeds and fruits of weeds.  
Sel'khozgiz, 1952

Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

MURAV'YEVA, Z.M.

Modification of Hestrin's method for the differential determination of true cholinesterase and pseudocholinesterase. Vop. med. khim. 7 no. 1:97-101 Ja-F '61. (MIRA 14:4)

1. Laboratory of Pharmacology, Institute of Toxicology of the Academy of Medical Sciences of the U.S.S.R., Leningrad.  
(CHOLINESTERASE)



**MURAWA, Czeslaw**

New selection system of electric car heating. Przegl kolej  
mechan 13 no.4:126-3 of cover Ap '61.

WOZNIAK, Wanda; MURAWSKA, Barbara; WERAKSO, Boguslawa

Microbiological method of determination of glutamic and aspartic acids. Acta Pol. pharm. 22 no.2:191-194 '65.

1. Z Zakladu Farmakologii Instytutu Lekow w Warszawie (Kierownik: doc. dr. J. Venulet).

BASINSKA, Halina; ORYLSKA, Krystyna; MURAWSKA, Zofia

Indirect manganometric method of determining bismuth by precipitation with oxalic acid. Chem anal 8 no.2:151-155 '63.

1. Department of Inorganic Chemistry, N.Copernicus University, Torun.

MURAWSKI, Wigeniusz

Autonomous innervation of the palm in humans. *Acta Pol. med.* (Gdansk) 9 no. 21:153-217 1964.

1. Anatomii i topografii i topografii i topografii Akademii Medycznej w Szczecinie (Kierownik: Prof. dr. Adam Kuczyński) i Anatomii Prawidłowej Akademii Medycznej w Gdańsku (Kierownik: Prof. dr. Michał Reicher).

MURAWSKI, Eugeniusz

Cutaneous innervation of the dorsum of the foot in the monkey  
*Macaca mulatta*. Roczn. pom. akad. med. Swierczewski 11:17-27  
'65.

Superficial veins of the dorsum of the foot in the monkey  
*Macaca mulatta*. Ibid.:229-236

1. Z Zakladu Anatomii Prawidlowej i Topograficznej Pomorskiej  
Akademii Medycznej (Kierownik: prof. dr. med. Adam Krechowiecki).

CHYZANOWSKA, Gertruda; MURAWSKI, Eugeniusz

Superficial veins of the forearm of *Macaca mulatta*. Rocz. pom.  
akad. med. Swierczewski 11:145-150 '65.

1. Z Zakladu Anatomii Prawidlowej Pomorskiej Akademii Medycznej  
(Kierownik: prof. dr. med. Adam Krechowiecki).

ZAKRZEWSKI, K.; MURAWSKI, K.; KRYSIAK, J.

New method of determination of dextran in blood, urine, and tissue.  
Acta physiol. polon. 4 no.3:253-257 1953. (CML 25:5)

1. Of the Division of Biochemistry of the Institute of Hematology  
(Director--Prof. A. Hausmann, M.D.), Warsaw.

MURAWSKI, K.; KRYSIAK, I. J.

Comparative studies on dextran and other plasma substitutes. Polski tygod. lek. 8 no.34:1188-1189; contd. 24 Aug 1953. (CML 25:4)

1. Of the Biochemical Division of the Institute of Hematology (Director -- Docent A. Hausman, M.D.), Warsaw.



Murawski, Z.

# POL.

Molecular structure of the products of dextran hydrolysis.  
K. Zakrzewski, J. Kryslak, K. Murawski, Z. Biay, and  
J. Malec (Inst. Hematol., Warsaw, Poland). *Acta Bio-  
chim. Polon.* 1, 27-45(1954). Dextran (1) (cf. Czechowska,  
*Pol. Arch. Med. Wewn.* 24, 1(1954)) was fractionated by re-  
peated pptns. with various concns. of EtOH. The frac-  
tions covered the mol. range of 20,000-80,000. The mol.  
wt.-diffusion const. and mol. wt.-viscosity relations show  
that the length of the short axis of the mols. remains const.  
through the mol. wt. range investigated, but the long axis  
varies in proportion to the mol. wt. The no. of glycosidic  
bonds other than the 1:6 decreases with degree of degrada-  
tion of 1; branching is not longer than a single glucose unit.  
The main chain of the mol. appears to be a helix composed of  
4-5 glucose units per turn. The product of hydrolysis of  
native dextran contains fractions of high viscosity and low  
mol. wt., with very low branching. These fractions do not  
belong to the therapeutical preps. and they increase the  
erythrocyte sedimentation rate. I. Z. Roberts

MURAWSKI, K.

# POL.

Dextran hydrolyzate, a homologous series of polysaccharides. K. Zakrzewski, J. Krysiak, K. Murawski, Z. May, and J. Malec (Inst. Hematol., Warsaw). *Bull. Acad. polon. sci. Classe II*, 2, 67-71 (1954).—The polysaccharides of the nontoxic therapeutically useful dextran hydrolyzate form a homologous series. Fractions of the hydrolyzate were isolated by repeated pptn. with EtOH at various temps., and the partial sp. vol., viscosity, diffusion const., mol. wt., and the no. of glycosidic bonds detd. There is a striking difference between the "toxic" and "therapeutic" series regarding their influence upon the erythrocyte sedimentation rate.

Oller L. Baril

*Murawski, K.*

3307

543.854.74:547.458.6:516.1

Zakrzewski K., Murawski K., Melec J., May Z., Krystak J. The Appli-  
cation of Various Functions of Viscosity for Technical Analysis of  
Dextran.

„Zastosowanie różnych funkcji lepkości do analizy technicznej de-  
kstranu”. Przemysł Chemiczny. No. 4, 1954, pp. 209-211, fig. 3, tabo.

Four different functions of viscosity were applied to the viscosity  
data obtained for purified hydrolysed dextran fractions. When the  
coefficient of variation is 4.82, the intrinsic viscosity determined from  
the Martin equation gives maximum results with the smallest standard  
deviation from average. This viscosity can, with an absolutely satis-

factory degree of accuracy, be determined for a given dextran sample  
from a single measurement by applying the formula

$$[\eta] = \frac{\ln \frac{\eta}{\eta_0}}{c} \cdot c_0 \leq 1.$$

MURAWSKI, K.

636. Application of different viscosity functions to the analysis of technical dextran. K. Zakrzewski, K. Murawski, J. Malec, Z. May and J. Krysiak (Haematol. Inst., Warsaw) (*Przem. Chem.*, 1954, 30, 208-211).—Medicinal dextran must be of fixed mol. wt. This is controlled by measurement of viscosity which is a function of mol. wt. and structure.  $[\eta] = kM^a$ ;  $[\eta]$  is found by measurement of viscosity at various concentrations and extrapolating to zero concn. Different graphs are obtained depending on the function of viscosity used. With Kraemer's function,  $[\eta] = \lim_{c \rightarrow 0} \frac{\eta - \eta_0}{c}$ , points lie on a straight line for concn. up to 1 per cent. The Philipoff function  $\eta = \left[1 + \frac{[\eta]c}{8}\right]^8$  gives the least satisfactory results. Martin's empirical equation was also applied. The best results are obtained when the coeff. of variation is 4.82. The intrinsic viscosity can be obtained for a given dextran sample from a single measurement with satisfactory exactness from the formula  $[\eta] = \frac{\ln \eta_r}{c}$ , when  $c \leq 1$ . A. O. JAKUBOVIC

(4)

OZECZOWSKA, Zofia; DUBROWSKI, Jerzy; HAUSMAN, Artur; KOSTRZEWSKA, Ewa;  
KRYSIAK, Janina; MURAWSKI, Krzysztof; PANASEWICS, Josef. ZAKRZEWSKI,  
Kazimierz

Poliglukan, partially hydrolyzed dextran solution with anti -shock  
action. Polskie arch. med. wewn. 24 no.1:1-17 1954.

1. Z instytutu Hematologii a Warszawie, kierownik. Działu Biochemii  
Instytutu Hematologii: dr K.Zakrzewski, Dyrektor Instytutu: doc.  
dr A.Hausman.

(DEXTRAN,  
hydrolyzed solution, ther. of shock)  
(SHOCK, therapy,  
dextran hydrolyzed solution)

MURAWSKI, K.

3  
The interaction between borate and dextran. K. Zarkzewski, Z. May, and K. Murawski (Inst. Hematol., Warsaw, Poland). *Biochimica et Biophysica Acta*, 598-602(1956). The previously described dextran fractions were used in these expts.

(C.A. 49, 4053e, 4935g). Homogeneous fractions of dextran dissolved in a borate buffer of pH 10 have an electrophoretic mobility which is proportional to the mol. wt. of the dextran within the limits of 18,000-60,000. The rate of the electrophoretic mobility of dextran depends upon the molarity of the borate buffer. The greatest difference in the mobility rate of the different dextran fractions was recorded in the buffer electrophoretic range of 0.045-0.085M. Above and below those limits the mobility rate of the dextran fractions is affected to an increasingly lesser degree by differences in the borate buffer molarity. Thus, a method has been established for the appn. of dextrans of different mol. wts. The quantity of combined borate residuals considerably exceeds 1.5 for each glucose residual, a condition which obviates the possible formation of borate-glycol compds. The exptl. data accord with the assumption (hypothesis) that in the state of satn. each hydroxyl glucose group combines with one borate residual. B. S. Levitz

MURAWSKI, K.; ZAKRZEWSKI, K.

Studies on the application of globin solution as an anti-shock agent.  
Acta physiol. polon. 8 no.3:472-473 1957.

1. Z Zakładu Biochemii Klinicznej Instytutu Hematologii w Warszawie.  
Dyrektor Instytutu: doc. dr A. Trojanowski.

(HEMOGLOBIN,

globin solution, eff. on exper. shock (Pol))

(SHOCK, experimental,

eff. of globin solution (Pol))

~~MURAVSKIY, K.~~  
MURAVSKIY, K. [Murawski, K.]; ZAKSHEVSKIY, K. [Zakrzewski, K.]

Production and certain chemical and pharmacological properties of esterified human globin [with summary in English]. Biokhimiia 22 no.5:789-793 S-O '57. (MIRA 11:1)

1. Otdeleniye biokhimii Instituta gematologii, Varshava.  
(GLOBINS)



KOSCIELAK, J.; MURAWSKI, K.; NIEBROJ-DOBOSZ, I.

Para-phenylene diamine oxidase activity in protein fractions of human and animal blood serum. Acta physiol.polon. 10 no.6:685-689 N-D '59.

1. Neurological Clinic, Faculty of Medicine, Warsaw Medical School, Warsaw. Head: Prof.dr I. Hausmanowa. Psychoneurological Institute, Pruszkow. Director: Prof.dr Z. Kuligowski.  
(OXIDASES blood)  
(BLOOD PROTEINS chem.)

WALD, Ignacy; MURAWSKI, Krzysztof; SZAJBEL, Wacława

Ceruloplasmin. Postery hig.med.dosw. 13 no.6:697-719 '59.  
(SERUM GLOBULIN)

CENDROWSKI, Wojciech; MURAWSKI, Krzysztof

Quantitative determination of aminoaciduria & other biochemical data in multiple sclerosis. Polski tygod. lek. 14 no.15:663-665  
13 Apr 59.

1. Z Panstwowego Instytutu Psychoneurologicznego w Pruszkowie;  
dyrektor: prof. dr Z. Kuligowski, kierownik Oddzialu neurologicznego:  
dr med. E. Jezewska adres: Pruszkow Wschodni k/Warszawy, Inst. Psycho-  
neurologiczny.

(MULTIPLE SCLEROSIS, metab.

blood cholesterol & pyruvic acid & aminoaciduria (Pol))

(AMINO ACIDS, in urine

in multiple sclerosis (Pol))

(CHOLESTEROL, in blood

same)

(PYRUVATES, in blood

pyruvic acid in multiple sclerosis (Pol))

MURAWSKI, K.; SZAJBEL, W.; WALD, I.; WOCHNIK, D.

Glutamic-oxalacetic transaminase in cerebrospinal fluid of patients  
with cerebrovascular accidents. Bul Ac Pol biol 8 n0.10:469-471  
'60. (KEAI 10:9)

1. Psychoneurological Institute, Pruszkow. Presented by A. Biernacki.

(Glutamic oxalacetic transaminase) (Brain)

KOLAKOWSKA, Tamara; SZAJBEL, Wacława; MURANSKI, Krzysztof

Serum ceruloplasmin and copper in schizophrenia. Neur.&c.polska  
10 no.5:691-696 '60.

1. Z II Oddziału psychiatrycznego, Kierownik: doc.dr J.Jaroszyński  
i Pracowni Biochemicznej, Kierownik: dr. W.Szajbel Instytutu  
Psychoneurologicznego w Pruszkowie, Dyrektor: prof. dr  
Z.W.Kuligowski.

(SERUM GLOBULIN)

(COPPER blood)

(SCHIZOPHRENIA blood)

MURAWSKI, K.

SPYCHALSKA, Z.

Date: (12/1/61); Given Name:

Country: Poland

Academic Degree: (Not given)

Affiliation: Biochemistry Department of the Hematology Institute (Zaklad Biochemii Instytut Hematologii), Warsaw

Source: Warsaw, Przegląd Lekarski, No 5, 1961, pp 193-194.

Title: "Electrophoretic Determination of Fetal Hemoglobin"

Co-authors:

MURAWSKI, K. Biochemistry Department of the Hematology Institute, Warsaw  
Z KUCZYNSKI, I. Biochemistry Department of the Hematology Institute, Warsaw

MURAWSKI, K.

MURAWSKI, K.  
SURNAME (in caps); Given Names

Country: Poland

Academic Degrees: Prof., dr med  
Head of the Clinical Biochemistry Laboratory (Pracownia Biochemii  
Affiliation: Klinicznej) and the Department of Internal Diseases (Oddzial Chorob  
Wewnętrznych), Institute of Hematology (Instytut Hematologii), Warsaw; Director:  
KZDOWSKI Docent A. TRZAJAKOWSKI, dr med  
Source: Warsaw, Przegląd Lekarski, No 5, 1961, p. 212.  
Date: "Investigation on the Provocation of the Picture of Dysproteinemia by the  
Action of Plasma on Fibrinogen." (Abstract)

Co-authors:

BUDZYNSKI, A.

KDZC, Maria, Clinical Biochemistry Laboratory and the Department of Internal  
Diseases, Warsaw; Director: Prof. W. KOWALSKI, dr med

MURAWSKI, K.

LATALLO, Z., Institute of Hematology (Instytut Hematologii), Warsaw;  
Director: Docent A. TRZAJAKOWSKI, dr med

MURAWSKI, K.; SZAJBEL, W.; WALD, I.; WOCHNIK, D.

Glutamic-oxalacetic transaminase in the cerebrospinal fluid in vascular diseases of the brain and other diseases of the nervous system. Neurol. etc., polska 11 no.3:327-334 '61.

1. Z Instytutu Psychoneurologicznego w Pruszkowie Dyrektor: prof. Z.W.Kuligowski.

(TRANSMINASES csf)

(CEREBROVASCULAR DISORDERS csf)

(NEUROLOGY csf)



MISZCZAK, Teresa; MURAWSKI, Krzysztof

Serum haptoglobin content in normal subjects. Polskie arch. med. wewn.  
31 no.6:847-851 '61.

1. Z Zakladu Biochemii Kierownik: doc. dr med. K. Zakrzewski Instytutu  
Hematologii w Warszawie Dyrektor: doc. dr med. A. Trojanowski.

(GLYCOPROTEINS blood)

RYTKA, Jerzy; MURAWSKI, Krzysztof

Studies on latent iron deficiency in blood donors. Polskie arch.  
med. wewn. 31 no.10:1369-1374 '61.

1. Z Zakladu Biochemii Kierownik: doc. dr med. K. Zakrzewski Instytutu  
Hematologii Dyrektor: doc. dr med. A Trojanowski.  
(ANEMIA HYPOCHROMIC diag) (BLOOD DONORS)

MUSIAL, W.; KRYKOWSKI, E.; KOLCZYCKA, Z.; MURAWSKI, K.

Thalassemia minor in a Polish family. Polskie arch. med. wewn.  
31 no.11:1541-1549 '61.

1. Z II Kliniki Chorob Wewnętrznych AM w Łodzi Kierownik: prof.  
dr nauk med. J.Jakubowski i z Zakładu Biochemii Instytutu Hematologii  
w Warszawie Kierownik: doc. dr med. K.Zakrzewski.  
(ANEMIA ERYTHROBLASTIC case reports)

WALD, Ignacy; MURAWSKI, Krzysztof; SZAJBEL, Wacława

Ceruloplasmin in pre-placental, umbilical and infantile blood.  
Pediat. pol. 36 no.5:527-531 1961.

L. Z. pracowni biochemicznej Kierownik: dr W. Szajbel Instytutu  
Psychoneurologicznego w Pruszkowie Dyrektor: prof. dr med. Z.W.  
Kuligowski.

(SERUM GLOBULIN)  
(UMBILICAL CORD blood)

(PLACENTA blood)  
(INFANT NEWBORN blood)

SZYMANOWSKA, Z.; MURAWSKI, K.

Electrophoretic separation of  $\alpha$  and  $\beta$  chains of human haemoglobin.  
Postepy biochem. 8 no.4:579-580 '62.

1. Z Zakladu Biochemii Instytutu Hematologii w Warszawie.  
(HEMOGLOBIN)

SZYMANOWSKA, Zofia; POSZWINSKI, P.; MURAWSKI, K.; ZAKREWSKI, K.

Human serum albumins in starch-gel electrophoresis. Acta biochim.  
polon. 9 no.2:183-188 '62.

1. Department of Biochemistry and the Blood Derivatives Division,  
Institute of Haematology, Warszawa.  
(SERUM ALBUMIN chem) (ELECTROPHORESIS)

MISZCZAK-LOCH, T.; MURAWSKI, K.; ZAKRZEWSKI, K.

Haptoglobin types in Poland. Folia biol 10 no.3/4:321 '62.

1. Institute of Nuclear Investigations, Polish Academy of Sciences,  
Warsaw.

\*

BUKSOWICZ, C.; MURAWSKI, K.; SZAJBEL, W.; WALD, I.

Paraproteinemic neuropathy in the course of plasmocytic reticuloma.  
Neurol neurochir psych 12 no.5:769-772 S-O '62.

1. Oddzial Neurologiczny, Instytut Psychoneurologiczny, Pruszkow.  
Dyrektor: prof. dr Z. Kuligowski.

\*



FOLOD

Jerzy KOCIELNIK, M.D., and Halina GONIM, Institute of Biochemistry (Wydział Biochemii) (Lódź) (Lódź) Dr K. KOCIELNIK, of the  
Department of Biochemistry (Wydział Biochemii) (Lódź) (Lódź) (dyrektor, docent  
Lódź, 1962).

Qualitative Method for Dextran in Blood and Urine.

Lódź, Farmacja Polska, Vol 18, No 10, 10 Oct 1962; pp 463-465.

[English summary modified]: Method involves protein removal  
with trichloroacetic acid, precipitation in alcohol with 1% Na acetate,  
and centrifugation. Rapid and simpler than other known methods. Extinction  
coefficient (50 to 200 mg. added to 100 cc. serum; determined with  
spectrophotometer, 2.5 to 1.0 in urine, 1.0 to 1.8%) [See Polish, 3  
References]

1/1

MURAWSKI, Krzysztof; WALD, Ignacy; SZYMANOWSKA, Zofia

Serum haptoglobins in hepatolenticular degeneration. Pol. arch. med.  
wewnet. 32 no.8:965-969 '62.

1. Z Instytutu Hematologii w Warszawie Dyrektor: doc. dr med.  
A. Trojanowski z Instytutu Psychoneurologicznego w Pruszkowie  
Dyrektor: prof. dr med. Z.W. Kuligowski.  
(HEPATOLENTICULAR DEGENERATION) (HAPTOGLOBINS)

WALD, Ignacy; SZAJBEL, Wacława; MURAWSKI, Krzysztof

Metabolic disorders in hepatolenticular degeneration. I. Liver function tests. Pol. arch. med. wewn. 32 no.9:1117-1127 '62.

1. Z Instytutu Psychoneurologicznego Dyrektor: prof. dr med. Z.W. Kuligowski i z Państwowego Szpitala dla Nerwowo i Psychicznie Chorych im. prof. dr med. J. Mazurkiewicza w Pruszkowie Dyrektor: dr med. F. Kaczanowski.

(LIVER FUNCTION TESTS) (HEPATOLENTICULAR DEGENERATION)

CENDROWSKI, Wojciech; MURAWSKI, Krzysztof; SZYMANOWSKA, Zofia

Haptoglobins and blood groups in familial multiple sclerosis.  
Neurol. neurochir. psychiat. pol. 13 no.2:183-188 '63.

1. Z Oddziału Neurologicznego Instytutu Psychoneurologicznego  
w Pruszkowie Dyrektor: prof. dr med. Z.W. Kuligowski i z  
Zakładu Biochemii Instytutu Hematologii w Warszawie Dyrektor:  
doc. dr med. A. Trojanowski.

(HAPTOGLOBINS) (BLOOD GROUPS) (RH FACTORS)  
(MULTIPLE SCLEROSIS) (GENETICS, HUMAN)

BOGDANIKOWA, Beata; MURAWSKI, Krzysztof

The picture of proteins and glycoproteins in multiple myeloma. Pol. arch. med. wewnet. 34 no.2:119-127 '64

1. Z I Kliniki Chorob Wewnętrznych AM w Białymstoku (kierownik: doc.dr.med. B.Bogdanikowa) oraz z Instytutu Hematologii w Warszawie, Zakład Biochemii (kierownik: dr.med. K.Murawski).

★

KOZŁOWSKA, Janina; KOPPE-LIPOWSKA, Halina; MURAWSKI, Kazimierz;  
SZYMANOWSKA, Zofia.

The hemoglobin M-Radom clinical syndrome. *Pediat. Pol.* 38  
no.12:1043-1050 Dec

1. Z I Kliniki Pediatrycznej AM w Warszawie (kierownik: prof.  
dr.med. R.Baranski) ; z Oddziału Dziecięcego Szpitala Miejskiego  
w Radomiu (ordynator: dr.med. H.Koppe-Lipowska)  
i z Instytutu Hematologii w Warszawie (dyrektor: doc.dr.med.  
A.Trojanowski).

✱

MURAWSKI, Krzysztof

Congenital methemoglobinemias. Pol. tyg. lek. 19 no.36:  
1355-1356 7 S '64.

MP'RAVON'Y, K. [Miyawaki, K.]; SHIMANOW'KIN, B. [Shimazaki, B.]

Spectral properties of anomalous human hemoglobin. Probl. genet. i  
perel. krovi 10 no.4:22-34, Apr '66. (MIRA 18 6)

2. Otdeleniye biologicheskoy khimii Instituta genetik v  
Varshave, Pol'sha.



LIBERACKI, Mieczyslaw; MURAWSKI, Tadeusz

Certain problems of the Quaternary in the Wda River Valley below  
Groddek. Nauki matematyczne przyrod Torun no.10:21-56 '64.

1. Department of Physical Geography of the N. Copernicus University,  
Torun, and Department of Geomorphology and Hydrography of the Insti-  
tute of Geography, Torun, of the Polish Academy of Sciences.

WU A. S. 1, Tancourz

A conference on the hydrographic map of Bygoszcz Volynskaya. 1951.  
geogr 36 no. 4: 817-818, 1951.

MURAWSKI, Wilhelm; JANUSZ, Jan

Increased productivity of a pug mill producing tile drains  
of 100 mm diameter. Energetyka przem 10 no.3:105-106 '62.

1. Grudziadzkie Zaklady Ceramiki Budowlanej.

MURAY, Margit dr.

Extensive systemic blastomycosis of the Gilchrist type.  
Gyermekegygyaszat 6 no.12:378-382 Dec 55.

1. Szabadsaghegyi Allami Gyermekszanatorium (Igazgato: Flesch  
Istvan dr.) Extra-pulmonalis osztalyanak (Foorvos: Pozsonyi Jozsef  
dr.) koslem.

(BLASTOMYCOSIS, in inf. & child  
No. Amer. systemic (Hun))

SEMENENKO, B.I.; MURAY, S.V., ed.

[Collecting 2000 centners of cotton from a hectare; from  
the work practice of the Znamen' Collective Farm,  
Aravanskii district]; 11.3 tsennitsa khlopka s gektara; iz  
opyta raboty kollektiva iz. Znamen' Aravanskogo raiona.  
Prunzen, izdatel'stvo sel'skogo khoz-va, 1961. 8 p.  
(11.3 tsennitsa)

L 14773-65 EWG(j)/EWG(r)/EWT(1)/FS(v)-3/EWG(v)/EWG(a)/EWG(c) Pb-4/Pe-5

AEDC(a)/ASD(a)-5/AMD/AFTC(b) DD/MLK

ACCESSION NR: AT4049170

S/0000/62/000/000/0221/0222

AUTHOR: Murayenko, V. N. (Head of aviation medicine laboratory)

TITLE: Changes in the mean arterial pressure of man in moderate stages of hypoxia. [Report presented at the 14-aya konferentsiya fiziologov yuga RSFSR (14th Conference of Southern Physiologists of the RSFSR) held at Krasnodar, 1962]

SOURCE: Konferentsiya fiziologov yuga RSFSR. 14th, Krasnodar, 1962. Materialy\*. Krasnodar, 1962, 221-222

TOPIC TAGS: hypoxia, arterial pressure, pressure chamber, arteriosclerosis, cardiosclerosis

ABSTRACT: Fifty-six personnel of the Civil Air Fleet were subjected to pressure-chamber altitudes of 5000 m (405 mm Hg) for 30 min without receiving additional oxygen. The simulated rate of ascent was 10-15 m/sec. A mercury oscillograph was used in measuring arterial pressure before the test, after 1, 15, and 30 min of "flight", and after the "landing". Mean arterial pressure for 12 healthy members of the group was  $88 \pm 2.1$  mm Hg. No significant variations in arterial

Card 1/3

L 14773-65

ACCESSION NR: AT4049170

pressure were noticed under hypoxic conditions. Personnel with myocardiodystrophy and arteriosclerotic cardiosclerosis showed a characteristic increase ( $P = 0.01$ ) in mean arterial pressure in a standing test during the first minute of hypoxia (from  $90 \pm 1.8$  to  $102 \pm 3.5$  mm Hg). Twelve persons with hypertonia showed no significant variation in mean arterial pressure after 1 and 15 min of hypoxia, respectively. However, after 30 min, there was a significant decrease in arterial pressure (from  $104 \pm 2$  to  $96$  mm Hg). During a standing test, mean arterial pressure fell to  $95 \pm 3.2$  mm ( $P = 0.05$ ). In a group of six people with faulty mitral valves, there was no significant variation in mean arterial pressure under hypoxic conditions. It is thus concluded that under these experimental conditions the subject cardiovascular diseases were fully compensated and that they did not affect the "flight" activity of the examined personnel.

ASSOCIATION: Laboratoriya aviatsionnoy meditsiny\* GVF Severo-Kavkazskogo territorial'nogo upravleniya (Aviation Medicine Laboratory of the GVF North-Caucasus Territorial Administration)

Card 2/3

L 14773-65

ACCESSION NR: AT4049170

SUBMITTED: 15May62

NO REF SOV: 000

ENCL: 00

OTHER: 000

SUB CODE: PH, LS

ATD PRESS: 3141

Card 3/3



16.4000

26511  
S/044/61/000/004/026/033  
C111/C222

AUTHOR: Murayev, E.B.

TITLE: On the theory of summation of double series with Borel methods

PERIODICAL: Referativnyy zhurnal. Matematika, no. 4, 1961, 81-82, abstract 4 B 449. ("Uch. zap. Ural'skogo un-ta", 1960, vyp 23, no. 2, 15-33)

TEXT: For the double series  $\sum a_{ij}$  the author forms the exponential and integral Borel means  $B(x,y)$  and  $\phi(x,y)$  (for the one-dimensional case cf. Hardy, Divergent series, chapter 8)

$$B(x,y) = e^{-(x+y)} \sum a_{m,n} x^m y^n,$$

$$\phi(x,y) = \int_0^x \int_0^y e^{-(u+v)} \left( \sum_{m=0, n=0}^{\infty} a_{mn} x^m y^n \right) dx dy.$$

The author considers the summation of certain classes of double number  
Card 1/4

On the theory of summation ...

26511  
S/044/61/000/004/026/033  
C111/C222

series denoted by  $K_{\lambda_1, \lambda_2}$ ,  $L_{\lambda_1, \lambda_2}$ ,  $K_{\lambda_1, \lambda_2}^0$ ,  $L_{\lambda_1, \lambda_2}^0$ , with the

aid of the means  $B(x, y)$  and  $\Phi(x, y)$ , where a bounded limiting process is assumed (on the general theory of the summation of double series on the base of a bounded limiting process cf. C.N. Moore, Summable series and convergence factors, New York, 1938, chapter 6). Furthermore, the author considers relations of the type of inclusion for the mentioned summation methods. The results contained in the paper are analogous to the well-known results on the summation of ordinary series with Borel methods (cf. Hardy). Some of them read :

- 1) For the double series  $\sum a_{ij}$  let the conditions be satisfied (the series belongs to the class :  $L_{\lambda_1, \lambda_2}^0$ ) :

Card 2/4

26511

S/044/61/000/004/026/033

C111/C222

On the theory of summation ...

$$\left| \sum_{i=0}^{\infty} a_{ik} z_1^i / i! \right| \leq M_1(\alpha_{1,k}) e^{(1+\alpha_1)|z|}$$

$$\left| \sum_{k=0}^{\infty} a_{ik} z_2^k / k! \right| \leq M_2(\alpha_{2,k}) e^{(1+\alpha_2)|z|}$$

and  $\lim_{m,n \rightarrow \infty} \sum_{i=0, j=0}^{m,n} a_{ij} = S$ , then  $\lim_{(x,y)_{\lambda_1, \lambda_2} \rightarrow \infty} B(x,y) = S$ ,

where  $(x,y)_{\lambda_1, \lambda_2}$  means that  $\lambda_1 < x/y < 1/\lambda_2$ ;  $\lambda_1, \lambda_2 \leq 1$ .

In connection with this theorem cf. the paper of Berekashvili (R zh Mat, 1953, 1241). 2) If the double series is so that the function

$\sum a_{ij} z_1^i z_2^j$  belongs to the class of entire functions of the exponential type then from the B-summability of the series with respect to  $S$  there follows its  $B'_{\lambda_1 \lambda_2}$  - summability with respect to  $S$  in the bounded

Card 3/4

On the theory of summation ...

26511  
S/044/61/000/004/026/033  
C111/C222

sense (i.e.  $\lim_{(x,y)_{\lambda_1, \lambda_2} \rightarrow \infty} B'(x,y) = S$ ). The author also considers the

summation of some power series according to the Borel method. The corresponding results are parallel to the one-dimensional case (cf. Hardy). For the proof the author uses a lemma of the theory of functions of two complex variables the proof of which is not given. The representation is not always exact. X

[Abstracter's note : Complete translation.]

Card 4/4